

KARTA PRZEDMIOTU

Faculty of Civil Engineering and Environmental Sciences									
Field of study	Civil Engineering							Level and form of studies	first degree extramural
Specialty / diploma path	Common subject							Education profile	general academic
Name of the classes	Technogy of construction Works I							Item of the classes	B1N41030
								Type of the classes	obligatory
Forms of classes and number of hours	W	Ć	L	P	Ps	T	S	Semester	4
	20			20				Points ECTS	5
Introductory subjects	construction, building materials, concrete technology, basics of concrete structures								
Objectives of the course	To acquaint students with the basic concepts used in the technology of construction works. Teaching the identification of works and technological processes occurring in the implementation of building structures. Familiarizing students with the types of machines to perform construction works and the characteristics of their work. Developing the ability to design and analyze the implementation of technological processes by the complex mechanization method (designing a set of machines).								
Program content	<p>Lecture: Definition of the construction process, definition of the technological process. Simple and complex technological processes. Mechanization of construction processes (partial, comprehensive, automation, robotics). Complex mechanization method - definition and sequence of actions when designing the execution of technological processes, selection of machine sets. Construction transport technology (types of transport and used machines). Technology and mechanization of complex work processes: earthworks, monolithic works, assembly and finishing works. Breakdown of complex processes into simple processes, and thenon technological operations and the selection of machines for their implementation.</p> <p>Project (students carry out projects in teams):</p> <ol style="list-style-type: none"> 1. Design of the technology of wide-area excavation (simple process). 2. Design of monolithic works execution technology - complex process (formwork assembly process, reinforcement works execution process and concrete works execution process). 3. Design of the assembly technology of a prefabricated industrial hall (simple process). 								
Teaching methods	Information lecture, problem lecture, project method								

The form of completing of the classes	Lecture - written exam, project - project execution, project defense	
Learning effect symbol	Assumed learning outcomes	Reference to directional learning outcomes
EU1	He knows the basic concepts and principles of the identification of technological processes in construction. Has the necessary knowledge of the type of operating parameters of machines used in construction.	K_B1_W08 K_B1_W11 K_B1_W12
EU2	He can analyze the technological process of construction works, divide a simple process into operations and assign machines to their execution.	K_B1_W11 K_B1_W08 K_B1_U11
EU3	He can design sets of machines to perform construction processes, using the method of complex mechanization with computer support. He can analyze the obtained results. Is able to establish health and safety requirements in the implementation of construction works.	K_B1_W02 K_B1_W08 K_B1_U07 K_B1_U10
EU4	He knows how to prepare a technology design for construction works: earthworks, monolithic and assembly works. Can calculate the efficiency and working time of machines used to perform individual processes, can work in a team.	K_B1_U02 K_B1_U07 K_B1_U10 K_B1_U14
EU5	Is able to use internet and other databases (e.g. product catalogs, consultations with experts, etc.)	K_B1_K02
EU6	He is prepared to critically assess his knowledge and received content in the field technology of construction works.	K_B1_K01
Learning effect symbol	Ways of verifying learning outcomes	The form of classes in which the verification takes place
EU1	written exam	W
EU2	written exam, project defense	W, P
EU3	written exam, project defense	W, P
EU4	project defense	P
EU5	project defense	P
EU6	Written exam, project defense	W, P
Balance of student workload (in hours)		Number of hours.
Calculation	participation in lectures	20
	participation in design exercises	20
	preparation for project exercises,	40
	own work on projects (at home)	40
	preparation for the exam and attendance at it	5
	SUM:	125

Quantitative indicators		HOURS	ECTS
Student workload related to the classes requiring the direct participation of the teacher.		45	2
Student workload related to practical classes		80	3
Basic literature	<ol style="list-style-type: none"> 1. Rowiński L. Technologia i organizacja procesów inżynierskich budownictwa miejskiego. Tom 3. Wydawnictwo Politechniki Śląskiej. 1996 2. Linczowski Cz. Technologia robót budowlanych. Politechnika Świętokrzyska. Kielce, 2000 3. Orłowski Z.: Podstawy technologii betonowego budownictwa monolitycznego. Wydawnictwo Naukowe PWN, Warszawa 2010. 4. Martinek W. Nowak P. Wojciechowski P.: Technologia robót budowlanych, Politechnika Warszawska, Warszawa 2012 		
Supplementary literature	<ol style="list-style-type: none"> 1. Instrukcja 431/2008 „Warunki techniczne wykonania i odbioru robót budowlanych” Konstrukcje betonowe i żelbetowe. Instytut Techniki Budowlanej, Warszawa, 2008 2. Chandler I.: Building Technology. Site Organization and Metod. Mitchell, Londyn, 1992 3. Kiernożycki W.: Betonowe konstrukcje masywne. Teoria, Wymiarowanie, Realizacja. Polski Cement Sp. z o.o., Kraków 2003 4. Rozporządzenie Ministra Infrastruktury z dnia 6 lutego 2003 r. w sprawie bezpieczeństwa i higieny pracy podczas wykonywania robót budowlanych (Dz. U. z dnia 19 marca 2003 r.) 		
Executing unit	Department of Building and Road Engineering	Date of the program development	
The program was developed by	Katarzyna Kalinowska-Wichrowska, PhD Nina Szklennik, M.Sc.	30.01.2019	